STATE OF MONTANA
MONTANA DEPARTMENT OF TRANSPORTATION
JOB PROFILE

☐ Update
☐ Formal Review

Date Submitted _____

SECTION I - Identification

Working Title:
Project Development Engineer

Department:
Transportation

Job Code Number:
172517

Division & Bureau:
Rail, Transit, & Planning Division
Environmental Services Bureau

Job Code Title:
Civil Engineer Specialist

Section & Unit:
Environmental Engineering Section

Pay Band:
7

Work Address:
2960 Prospect Ave
Helena, MT 59620

Position Number:
33002, 33007, 33014, 33015, 33038

Phone:
406-444-7228

☐ FLSA Exempt ☒ FLSA Non-Exempt

☒ Non-Union ☐ MPEA ☐ Blue Collar

Profile Completed By:	**Work Phone:**
Heidy Bruner, P.E., Engineering Section Supervisor	406-444-7203
Tom Martin, P.E., Environmental Services Bureau Chief	406-444-7203

Work Unit Mission Statement or Functional Description:

The Environmental Services Bureau (ESB) mission for MDT is to be the expert regarding all environmental issues, concerns and opportunities. The ESB provides guidance to all Divisions and the Director's Office to ensure compliance with environmental laws, rules, regulations, policies, orders, and agreements. The ESB identifies and evaluates potential impacts of transportation construction and maintenance activities on natural, social, and economic resources and recommends measures to avoid, minimize, or mitigate such impacts in compliance with applicable state, federal, and tribal regulations and policies. Resources evaluated by ESB include those pertaining to fish, wildlife, vegetation, wetlands, water resources, water quality, historic, cultural, archaeological, paleontological, hazardous and solid waste, erosion control, air quality, noise, visual, social, economic, etc.

The Environmental Engineering Section plays an integral part in ensuring that MDT's work is conducted in accordance with laws such as the National Environmental Policy Act (NEPA), Montana Environmental Policy Act (MEPA), Clean Water Act (CWA) and applicable MDT and Federal Highway Administration (FHWA) rules, standards and guidelines. The section maintains a high level of

knowledge, skill, and ability in applying these laws to MDT's activities: preconstruction, planning, construction, maintenance, motor carriers, and facilities. The Section coordinates with planning, design, maintenance, and construction, and develops guidelines, and procedures to ensure that all MDT projects meet the requirements of NEPA, MEPA, the Federal Clean Water Act, and other applicable federal, state, and local laws.

Describe the Job's Overall Purpose:

This position is an Environmental/Civil Engineer Specialist in the Engineering Section of the Environmental Services Bureau. The position is commonly referred to as an Environmental Project Development Engineer (PDE). The position is responsible for conducting in-depth civil and environmental engineering analyses and technical review to identify and assess potential social, economic, and environmental impacts associated with MDT projects. The Section exercises solid environmental engineering judgment coupled with accurate legal interpretation. This position is responsible for developing, evaluating, and suggesting effective means and methods of avoiding, minimizing, and/or mitigating potential impacts. This position is responsible for working with a wide variety of professionals to ensure optimization of project design in relation to projected social, economic, and environmental impacts and sound engineering design principles. The position conducts various reviews; participates in meetings; develops reports; recommends design features; evaluates design alternatives; proposes avoidance, minimization, and mitigation strategies; determines, prepares, and negotiates necessary environmental permits and documentation; provides technical assistance and training; administers projects; actively manages the work of consultants; prepares special provisions for inclusion in contract plans; coordinates comments from ESB reviewers from all ESB sections, and performs various other duties as needed. The position reports to the Environmental Engineering Section Supervisor, and does not directly supervise other agency personnel.

SECTION II - Major Duties or Responsibilities

This section should be a clear concise statement of the position's major duties and the approximate percent of work time for each duty ***% of Time***

A. ENVIRONMENTAL ENGINEERING ANALYSIS AND PROJECT DEVELOPMENT 50%

1. Conducts in-depth engineering analysis and technical review of transportation design concepts, plans, specifications, and reports for each proposed project. The goal of that analysis and review is to identify and assess potential social, economic, and environmental impacts and means to avoid, minimize, or mitigate those impacts in accordance with applicable laws. Participates in Field Reviews to ensure appropriate consideration of social, economic, and environmental issues, impacts, and potential mitigations. This participation includes evaluating survey information; providing engineering analysis and technical support regarding environmental issues; providing recommendations for optimized project design and development; and ensuring compliance with all applicable environmental rules, regulations and guidelines, as well as permit requirements.

2. Participates in Plan-In-Hand meetings, scoping meetings, public hearings, design coordination meetings, and other reviews and conferences regarding proposed and existing projects. That participation includes providing recommendations, project progress reports, and technical guidance regarding environmental issues and concerns; establishing project priorities, and recommending sound engineering solutions to avoid, minimize, and/or mitigate adverse social, economic, and environmental impacts. Preparation for these meetings includes determining which environmental documents

and permits are needed, estimating how much time will be needed to complete them, and projecting needs involved in securing and negotiating necessary permits.

3. The PDE is responsible for serving as the ESB champion for review of Department Milestone Reports (such a Preliminary Field Review, Alignment and Grade Review, Scope of Work Reports, and Plan-In-Hand reviews), checklists, etc. This task involves distributing the reports and coordinating and incorporating comments and suggestions of ESB reviewers from all ESB Sections to prepare the single set of official ESB-wide comments concerning design. Successfully filling the document champion role involves providing expertise regarding design alternatives to ensure awareness and consideration of all social, economic, and environmental issues throughout project design; ensuring that the collaboration of comments leads to development of appropriate and optimized design alternatives; incorporating and ensuring the incorporation of this information into reports; negotiating design modifications to ensure optimized design and compliance with all applicable permit conditions and environmental regulations, as well as sound engineering principles; and coordinating design changes with the appropriate work units.

4. Compiles, synthesizes, evaluates, and interprets engineering and design elements for various proposed MDT projects to determine, analyze, and quantify potential social, economic, and environmental impacts that may result. Researches, compiles, and analyzes a variety of resources and data to determine and assess potential impacts. Determines the need for and requests or conducts additional surveys, resource studies, and other analyses to ensure adequacy of data for use in assessing environmental impacts for each proposed project. Assesses the adequacy of existing data, identifies information deficiencies, and verifies the accuracy and integrity of additional data.

5. Conducts or oversees fieldwork to closely observe and analyze project-related environmental issues such as potential impacts, areas that may be environmentally sensitive, and accurate placement of erosion control and other environmental design features. Continually monitors ongoing project development and provides engineering insight to project engineers and consultants to ensure that interrelated technical features present in project design remain within the scope of continually changing environmental issues.

6. For projects involving term consultants, the PDE develops project plans and requirements for use in developing bid solicitations. This includes assessing work load to determine which projects should be let to consultants; evaluating and selecting appropriate consultants based on expertise, availability, and other factors; defining all technical aspects of the project, such as scope, schedules, timelines, cost estimates, work review criteria, and proposal evaluation criteria; developing requests for proposals; evaluating and awarding proposals; and preparing agreements and contracts. Actively administers and monitors consultant agreements and contractor performance by reviewing and editing consultant reports, environmental documents, permit applications, and estimates for compliance with all applicable environmental and engineering standards and specifications, as well as adherence to terms of individual contracts. Monitors project budgets to ensure that all project billing is accounted for, and that project expenditures do not exceed budget allocations.

B. ENVIRONMENTAL DOCUMENTATION AND PERMIT APPLICATIONS 35%

1. Initiates, coordinates, prepares, submits, and secures the appropriate Clean Water Act Section 404 Permits and 401 Certifications, Tribal Water Resource Permits, and all other environmental permits necessary for highway construction projects. Reviews design

plans and all associated documentation (e.g., reports, plans, specifications, etc.); calculates riprap quantities, fill quantities, areas of impact, and quantifies various other factors as dictated by permit conditions; and recommends engineering solutions to avoid, minimize, and/or mitigate adverse environmental impacts to wetlands and other natural resources. Evaluates permit conditions to determine the analysis required to fulfill permit application requirements (e.g., hydraulic data analysis, wetland delineations, any additional tribal requirements, etc.) and initiates discussion with individual engineering project managers to identify, analyze, and document steps taken to minimize or avoid impacts. This includes reviewing plans in terms of environmental impacts, quantifying wetland acreage disturbed by project, calculating fill quantities, determining the appropriate permit types, coordinating with outside entities (e.g., DEQ, COE, contracted professionals, etc.) to ensure compliance with all requirements for each permit, and identifying all permit concerns to ensure that all necessary factors and issues have been adequately considered and documented to satisfy all permit application requirements and withstand scrutiny by outside agencies. Prepare appropriate special provisions for inclusion in the contract plans to ensure that contractors are informed of enforceable permit conditions and authorized activities. Permitting procedures and requirements of outside agencies are constantly evolving, and the incumbent must not only adapt to the continuous changes, but must also maintain awareness of such changes for application to future projects.

2. Determines necessity of incorporation of Permanent Erosion and Sediment Control (PESC) features into project plans. Determines appropriate PESC features for site-specific conditions. Ensures project designs are in compliance with MS4 requirements, as applicable.

3. Evaluates, compiles, and prepares engineering information for inclusion in permit applications for various Clean Water Act and Tribal permits prior to project letting. Prepares and verifies engineering calculations, and determines appropriate modifications to engineering and design elements to ensure compliance of information with specific permit terms and conditions.

4. Provides effective continuous communication between design groups, consultants, various work units within the department (e.g., Preconstruction, District Construction, Right-of-Way, etc.), and other agencies to coordinate essential environmental data for numerous projects for use in the development of environmental documents, permits, erosion control plans, etc. Continually coordinates environmental and design information for a large number of projects; actively manages project activities and documents those activities in MDT's project management system. The incumbent must also continually consider and incorporate public comments and awareness of environmental interest groups throughout project development and implementation processes.

5. Analyzes and integrates the multitude of design parameters, safety, land use, utility, and right-of-way issues with highly sensitive social, economic, and environmental issues into an appropriate NEPA/MEPA environmental documentation (Categorical Exclusion, Environmental Assessment and Finding of No Significant Impact, or Draft and Final Environmental Impact Statements with Record of Decision). Uses excellent technical writing skills to prepare environmental documentation that explains complex design and compliance information in a manner that is easily understood by a wide variety of audiences. Determines and prepares the environmental document that will most efficiently and effectively provide legal defensibility based on individual project-specific issues. Analyzes and prepares appropriate documentation to ensure project compliance

in terms of areas such as the Clean Water Act, Clean Air Act, environmental justice, secondary and cumulative impacts, Farmland Protection Policy Act, Section 4(f) of the Transportation Act, Section 6(f) of the Land and Water Conservation Fund Act, and other environmental considerations, as well as approximately forty laws, orders, and rules that may be applicable to each project.

6. Participates in Planning and Corridor studies to assess the potentially affected environment, identify potential environmental concerns, ensure appropriate communication with the public and resource agencies, consider avoidance a minimization efforts, and produce a planning study that can feed directly into the NEPA/MEPA process. The PDE will assist in determining the appropriateness of conducting a corridor plan study and team members to participate on the Corridor Planning Team. The PDE will assist in developing the corridor study work plan (including the public involvement plan); the existing and projected conditions report; the project purpose, needs, issues, goals, screening criteria, and objectives. The PDE will participate in developing and assessing alternatives and deciding alternatives advanced, alternatives not advanced, and alternative priority. The PDE will assist with the drafting of the Corridor Study Report; associated communications with resource agencies and the public; assessment of potential social, economic, and environmental impacts; and recommendations for avoidance, minimization, and/or mitigation (on a planning scale not a NEPA scale).

C. TECHNICAL ASSISTANCE AND TRAINING 10%

1. Maintains a contemporary knowledge of environmental engineering and design practices, technologies, and other job-related skills by attending training and education workshops to maintain continuing professional development. Conducts continual research to maintain a current knowledge of continuously evolving state, federal, and tribal environmental policies and standards, scientific discoveries, and other job-related issues. Initiates and conducts specialized research projects and studies related to impacts to wetlands, cultural and natural resources, air and water quality, and other resources to continually develop solutions to avoid or minimize impacts of construction to natural resources.

2. Provides advanced engineering support and technical guidance to engineering, field construction, and maintenance personnel throughout the course of projects. This includes interpreting and explaining advanced technical aspects of environmental documentation, permit requirements, and designs; analyzing, evaluating, and resolving engineering problems encountered in the field; and providing quality assurance reviews.

3. Provides specialized environmental engineering assistance to Department engineers involved with road design, materials, traffic, and other units to ensure appropriate evaluation and incorporation of environmental considerations in various projects. Advises other work units of unusual or unique project conditions, or the potential need for specialized resource analysis. Trains other Department engineers and consultants on the application of new environmental engineering theories, permits, technologies, and standards to ensure that best practices are effectively incorporated into construction and maintenance processes.

4. Provides ongoing engineering coordination and analysis to project designers or consultants regarding design modifications resulting from environmental documentation and permits. Provides information to the public, consultants, and other agencies

regarding environmental impacts and concerns, and responds to design-related questions.

5. Through training and independent research, the incumbent maintains a contemporary knowledge of the continuously-evolving National, Tribal, and State environmental statutes, regulations, standards, and legal cases and adapts his or her work efforts and strategies to meet continuously evolving needs associated with environmental compliance.

6. Through training and independent research, the incumbent maintains a contemporary knowledge of the continuously evolving environmental engineering field and adapts his or her work efforts and strategies to incorporate the most current, effective, and efficient processes and procedures.

D. OTHER DUTIES AS ASSIGNED 5%

This position performs a variety of other professional and technical duties in support of Bureau and Division operations. This includes activities such as coordinating special projects, conducting or coordinating research, attending meetings and conferences, serving as MDT representative in the recruitment of new engineers, representing the Department to local groups and communities, attending and making presentations at the monthly/bimonthly Interagency Wetland Group/Corps of Engineers meetings and other agency meetings, and attending ongoing training and educational programs.

The following duties and/or specific tasks listed under section II above are considered "essential functions" because they require specialized expertise and skill and are the primary reasons the job exists (they must be performed by this position with or without accommodations):

The following duties are considered essential functions because they require specialized expertise and skill and are the primary reasons the job exists:

The duties described under the following are considered essential functions.
A. Environmental engineering analysis and project development,
B. Environmental Documentation and permit applications,
C. Technical assistance and training, and
D. other duties as assigned.
This position is considered a technical authority and problems or questions are referred to the incumbent for development of solutions based on specific professional knowledge in environmental engineering.

The following mental and physical demands are associated with these essential functions:

PHYSICAL

- Light lifting (less than 10 lbs.)
- Carry light items (papers, books, small parts)
- Remaining seated for extended periods of time, with occasional walking; standing; bending
- Walking along existing and proposed highway corridors for field reviews of potential road construction sites
- Travel within the state to distant project locations, and out of state travel by airline to national conferences and meetings.

- Operating a personal computer for extended periods of time
- Communicate clearly in writing, and verbally (in person and over the phone) to a wide variety of audiences of varying technical levels;

MENTAL

- Investigates, analyzes, and develops innovative solutions to complex and often unprecedented environmental and engineering considerations.
- Deal with the public on a regular basis
- Demands for accuracy in all aspects of work
- Ability to meet inflexible deadlines
- Ability to manage, prioritize, and coordinate a large number of tasks simultaneously
- Decision making that affects public health, safety, and environmental resources
- Computing arithmetic operations
- Flexibility and adaptability in response to ever-changing environmental rules, regulations, and permit conditions.
- Comparing data
- Compiling information
- Analyzing
- Coordinating
- Synthesizing
- Negotiating with design team and with regulatory and resource agencies
- Instructing
- Fosters effective relationships with regulatory agency personnel and other governmental personnel

Does this position supervise others? ☐ **Yes** ☒ **No**
Attach an Organizational Chart.

SECTION III - Minimum Qualifications - List minimum requirements for the first day of work.

Critical knowledge and skills required for this position:

KNOWLEDGE:

This work requires extensive knowledge of the theories, concepts, and principles of environmental and civil engineering as they relate to environmental resource management, including related mathematics and physical sciences (e.g., hydrology, geotechnical analysis, soil mechanics, chemical transport, etc.). The position also requires knowledge of the methods and practices of highway construction, engineering and design, and related policies, methods, procedures, specifications, and standards and regulations; contract administration; advanced research methods and techniques; environmental document development and analysis; erosion control; applicable state, federal, AASHTO, and FHWA requirements and standards; applicable state, federal, and tribal laws and permit requirements such as USDOT Act Section 4(f), NEPA, MEPA, COE water acts, and all other applicable environmental requirements, laws, and acts. Contract oversight responsibilities require knowledge of contract management, engineering principles relative to various contracted services, and project administration.

SKILLS:

This position requires skill in project management; analyzing and evaluating engineering designs in terms of environmental impact; developing specialized engineering solutions to site-specific environmental problems and conditions; and specialized analytical methods and techniques. The

position also requires skill in the use of office standard and specialized software applications, computer modeling techniques, analyzing and interpreting statistical information, and written and verbal communications, especially technical communications required for development of environmental documents, engineering reports, specifications, and other technical information.

Behaviors required to perform these duties:

See MDT Core Behaviors.

This position investigates, analyzes, and develops innovative solutions to complex and often unprecedented environmental and engineering considerations; plans, organizes, and manages engineering activities; establishes project priorities and organizes work; coordinates a large number of projects simultaneously; presents and defends new or unprecedented ideas, procedures, and technologies; communicates clearly verbally and in writing to audiences of varying technical levels; negotiates and/or mediates disputes arising from contract claims and adjustments; influences and motivates staff and consultants to meet common objectives; and establishes effective working relationships with tribal representatives, the public, other department staff, staff of state and federal agencies, and others.

Education:
Check the one box indicating minimum education requirements for this position for a new employee the first day of work:

- ☐ No education required
- ☐ High school diploma or equivalent
- ☐ 1-year related college/voc. training
- ☐ Related AAS/2-years college/vocational training
- ☒ Related Bachelor's Degree
- ☐ Related Master's degree

Please specify the acceptable fields of study:

This position requires a bachelor's degree in environmental engineering or a closely related engineering field.

Other education, training, certification, or licensing required (specify):

This position requires a Fundamentals of Engineering FE certification. A Professional Engineer (PE) license is preferred.

Experience:
Check the one box indicating minimum work-related experience requirements for this position for a new employee the first day of work:

- ☐ No prior experience required
- ☐ 1 year
- ☐ 2 years
- ☐ 3 years
- ☒ 4 years
- ☐ 5 or more years

Other specific experience: This position requires a minimum of four (4) years of progressively responsible engineering work, preferably in an environmental field. In addition, the incumbent is expected to pursue continuing education and research to maintain a contemporary knowledge of the ever-evolving environmental field including engineering and design practices, technologies, environmental regulation.

Alternative Qualifications:

Other equivalent combinations of education and experience may be considered

☐ Yes ☒ No

SECTION IV – Other Important Job Information

☐ Fingerprint check

☐ Valid driver's license

☐ Background check

☐ Other; Describe

Other information including working conditions such as shifts, lifting requirements, travel or hours.

This position requires occasional travel throughout the state to conduct project reviews, maintenance activities, and site evaluations; attend public/project meetings; and meet with government officials. Enforcement activities and investigations may lead to confrontational situations. The incumbent must be in good physical condition, capable of working in adverse weather conditions on all types of terrain, and capable of lifting and transporting supplies and equipment. Extended working hours and unusual shifts are required to meet project deadlines.

SECTION V – Signatures

Signature indicates this statement is accurate and complete.

Employee:

Name: _____ Title: _____

Signature: _____ Date: _____

Immediate Supervisor:

Name: Heidy Bruner _____ Title: Environmental Engineering Section Supervisor

Signature: _____ Date: 8/23/11 _____

Bureau Chief:

Name: Tom Martin _____ Title: Environmental Services Bureau Chief _____

Signature: _____ Date: 8/23/11 _____

Division/District Administrator:

Name: Lynn Zanto _____ Title: Planning Administrator _____

Signature: _____ Date: 8/23/11 _____

Department Designee:

Linda McKinney/Designee

Human Resources Program Manager
Human Resources Division

Signature: _____ Date: 8/23/11 _____